

CLAIMS

1. A method of regulating the power available at the manipulator of an electronic scalpel so as to cause said manipulator adapted to be used to obtain blood coagulation, said electronic scalpel being of the kind comprising:

- at least a rectifying circuit of the mains voltage supplying a rectified and direct voltage to
- at least a radio frequency circuit adapted to emit as output a current carrier signal at a main frequency set by an oscillator, said current signal feeding said manipulator by a radio frequency transformer,

wherein it applies to said manipulator a wave form resulting from the combination of said carrier wave and a modulating wave, said resulting wave being of such a frequency that the energy transmitted to the tissue to be coagulated is such to rise the temperature of the tissue to be coagulated until denaturation of the fibrinogen contained in the tissue is caused for its transformation into fibrin.

2. The method according to claim 1 **wherein** the energy transmitted by the manipulator to the tissue to be coagulated is such that the temperature of the tissue zone in which the coagulation takes place is comprised between 50°C and 75°C.

3. The method according to claim 1 **wherein** the variation of amplitude of the wave form applied to the manipulator is generated by the variation of amplitude of the power signal applied to the pilot circuit or by the variation of the feeding voltage.

4. An electronic scalpel to carry out the method of claim 1 of the kind comprising:

- a manipulator for clotting organic tissues and at least an electrode to close the electric circuit connected thereto;
- a rectifying circuit fed by the mains voltage, supplying a voltage to a radio frequency circuit;
- a radio frequency circuit comprising at least an electronic switch fed by said voltage and controlled by a pilot circuit,

wherein said radio frequency circuit has as output a resulting wave formed by the combination of a generally square carrier wave and a modulating wave, said resulting wave circulating in a wide band resonant circuit at the frequency of said carrier wave.

5. The electronic scalpel according to claim 4 **wherein** said resonant circuit comprises at least the parasitic capacity of said electronic switch and the

inductance of the primary circuit of a radiofrequency transformer feeding said manipulator.

6. The electronic scalpel according to claim 4 **wherein** the wave form amplitude at the manipulator is variable by means of a regulator which modifies the voltage of the pilot circuit.

7. The electronic scalpel according to claim 4 **wherein** the wave form amplitude at the manipulator is variable by the modification of the rectified and direct voltage which feeds said radiofrequency circuit, being maintained constant the voltage feeding the pilot circuit of said at least an electronic switch.

8. The electronic scalpel according to claim 4 **wherein** the wave form amplitude at the manipulator is variable by the modification of the rectified and direct voltage which feeds said radiofrequency circuit and by means of a regulator which modifies the voltage of the pilot circuit.

9. The electronic scalpel according to claim 4 **wherein** said pilot circuit is connected to a control circuit comprising a microprocessor interrupting at predetermined intervals the feeding of said pilot circuit so that the resulting wave passing through the resonant circuit takes the form of a train of intermittent pulses, each consisting of an amplitude modulated wave.

10. The electronic scalpel according to claim 4 **wherein** said modulating wave is applied to the collector of said electronic switch through a mains rectified voltage wave without the negative half wave.

11. The electronic scalpel according to claim 4 **wherein** the carrier wave has the main frequency at 4 MHz.

12. The electronic scalpel according to claim 11 **wherein** the pulse train of the modulating wave has a frequency of 20-30 KHz.

13. The electronic scalpel according to claim 11 **wherein** the modulating wave has a frequency of 50 Hz.

14. The electronic scalpel according to claim 11 **wherein** the modulating wave has a frequency of 60 Hz.